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ABSTRACT

This paper discusses potential trade-offs between equity and efficiency as they pertain to the implementation of federal policy in education. It is the policy analyst's role, the paper says, to investigate the existence and magnitude of such trade-offs in a manner most useful for policy-making. The first section reviews the rationale for a federal role in education. The second section briefly describes the characteristics of the current federal role. The third describes how and why the objectives of equity and efficiency apply to federal education policy. The subsequent section discusses Title I of the Elementary Secondary Education Act, as an example of federal policy in education. The final section reviews the findings of an empirical analysis of Title I as it applies to the question of assessing equity and efficiency trade-offs in federal education policies. (Author)

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"Federal Policy Trade-Offs Between Equity and Efficiency"

Jane Sjogren

For presentation at the annual meeting of the American Education Finance Association, San Diego, California -- March, 1980

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FEDERAL POLICY TRADE-OFFS BETWEEN EQUITY AND EFFICIENCY

Introduction

This paper introduces the notion of potential trade-offs between equity and efficiency as they pertain to the implementation of federal policy in education. It views this question from the perspective that it is the policy analyst's role to investigate the existence and magnitude of such trade-offs in a manner which is most useful for policy-making.

Accordingly, there are five sections in the discussion. The first reviews the rationale for a federal role in education. The second briefly describes the characteristics of the current federal role. The third describes how and why the objectives of equity and efficiency apply to federal education policy. The subsequent section provides an example of an empirical analysis, using ESEA Title I, the largest federal program for young students, as an example of federal policy in education. The final section reviews the findings of the empirical analysis as they apply to the question of assessing equity/efficiency trade-offs in federal education policies.

The rationale for a federal role in education

In the United States, the public sector is composed of a central government and decentralized governmental units. This system is characterized by the delegation of authority from the central (or federal) government to the sub-units (usually state or local governments) for the provision and financing of public goods and services within their jurisdictions and for their constituents. Economists use the term "fiscal federalism" to describe the economic relationships among the governmental units in a federal system such as ours, the American one. The central concern of fiscal federalism is how to structure the components of the system in a way which maximizes the total social welfare. This is a complex problem because of the nature of public goods and services. First, many public goods have "externalities". That is, the costs or benefits of a public good (or the lack thereof) may extend beyond, or "spill over", the jurisdictional boundaries of the sub-unit responsible for its production and distribution. Second, there may be costs associated with collective decision-making. Third, geographic mobility among jurisdictions affects the incidence of the costs and benefits of public goods. In addition, the existence of constitutional (or political) jurisdictional boundaries and the dynamic character of the system further complicate the problem.

Each governmental unit acts in the interests of its constituents and the central or federal level acts in the interests of the society as a whole. In so doing, the federal government seeks to encourage the sub-units in the provision of public goods and services which benefit society as a whole. Occasion for direct federal support of a specific socially-desirable or "merit" good arises when such a good is not produced in sufficient amounts or distributed

in a socially-desirable way by state or local governments. The main policy instrument used by the federal government in such cases is inter-governmental grants-in-aid. Traditionally, education has been the domain of local governments which produce and distribute educational services financed by state and local revenues. Insofar as many of the private and social benefits of education accrue to state and local constituents, it is appropriate that public education is a state and local responsibility. However, because many of the economic and political benefits of education are considered to be merit goods and because those benefits become more national in character because geographic mobility of the population has increased as regional economic and social interests have decreased, there is an increasing role for the federal government in education.

The current federal role in education

In the last 15 years, the federal government has taken an increasingly active role in education. Most of its activities have been intended to alter either the types or amounts of educational services produced by state and local governments or the distribution of educational services. As noted by Timpane[1], the activities have fallen into five general areas: promotion of equal opportunity, stimulation of educational reform, support of educational research, promotion of preparation of employment, and provision of limited general support. Of these activities, the federal level has been most involved and committed the largest share of its resources to attempting to improve educational opportunity. Reflecting this goal, the largest federal program for young students in education is Title I of the Elementary and Secondary Education Act of 1965 (as currently amended). Title I is intended to improve or

[1]Timpane, Michael (ed.), The Federal Interest in Schooling, Cambridge, MA, Ballinger, 1978.

equalize the educational opportunity of disadvantaged students by providing financial assistance to local educational authorities for compensatory educational services for these students.

Federal policies have typically taken one of two forms. They may be service mandates in which the federal government requires that state or local education authorities provide certain types or amounts of services. Typically, these service mandates set minimum service requirements and the operating authority is not supported (or receives only limited support) from the federal level. The second form is federal grants-in-aid to state or local governments. These grants have two sets of characteristics. First, the form or structure of the grant is designed to provide financial incentive for the recipient agency to provide the service desired by the federal level. The structure of the grant is usually defined as to its selective (categorical) vs. general nature and according to whether or not it has matching funds requirements. Second, most federal grants-in-aid used for education have regulations governing grant use and recipient eligibility. These regulations are legal requirements which are intended to enforce desired forms of recipient behavior, especially with respect to the distribution of grant funds or the services purchased with grant funds.

It is important to note that because of the system of federal federalism used in this country and the lack of direct federal control over education, the federal government's activities in education are largely limited to the use of policy tools like these. For example, in the case of Title I, the federal level is specifically proscribed from "(exercising) any direction, supervision, or control over the curriculum, program of instruction, administration, or personnel at any education institution, school or school system."

In many respects, Title I exemplifies federal policy as it is composed of grant structure and grant regulation. Title I grants are categorical in that Title I funds may only be used to provide compensatory services. They are both project and formula grants as districts must make annual applications for Title I funds and those funds are then allocated according to a formula which directs relatively more funds to those districts with higher proportions of low-income students. There are no matching fund requirements. However, the federal government does intend that Title I grant funds function as "seed" money to promote district efforts in the production of compensatory services. Title I regulations control both eligibility and funds and service distribution. Briefly summarizing, eligibility regulations require "maintenance of (non-federal) fiscal effort" and "comparability" of non-federally supported resources among all schools, whether or not they receive Title I funds. The regulations affecting fund and service distribution require that Title I funds be used in only those schools which have a higher than district average proportion of low-income students and that only low-achieving students in those schools receive Title I services.

Equity and efficiency as goals in federal programs

At the most general level, there is little obvious argument that federal programs in education should be designed to be both equitable and efficient. However, operational definitions of both of these concepts, particularly ones which take into account the limitations inherent in the federal role, are not quite so obvious.

In general, efficiency can be defined as the allocation of scarce resources in such a way as to maximize the value of output of the goods and services resulting from those resources. However, several considerations relevant to education confound a straightforward application of this definition. Because the benefits of education, social benefits in particular, have many externalities

and are extremely difficult to quantify, it is difficult to determine how educational benefits or outcomes are appropriately realized. In addition, there is relatively little conclusive research evidence as to the relationship between resources and educational outcomes, as noted recently by Hanushek[2] and others. However, in the interest of evaluating federal policy which can be evaluated at least to some extent, it is possible in some cases to look at efficiency in terms of the amount of services which result from a federal program or service mandate. In the case of Title I for example, efficiency can be determined, at least to some extent, by determining the amount of compensatory services a given form of policy effects.

Equity may be defined as a normatively desired distribution (or re-distribution) of the goods and services produced or of the rights, privileges, and opportunities associated with those services. This emphasis on some normative distribution can take a number of forms such as equalizing expenditures, equalizing the burden of support for the desired services or equalizing the opportunity to benefit from the goods and services in question. In the case of the Title I program, which seeks to improve educational opportunity by providing compensatory educational services to disadvantaged students, it is appropriate to view equity as the distribution of those federally-funded compensatory services to disadvantaged students.

Clearly, there are multiple ways of looking at equity and efficiency as they apply to federal policy in education. Because the current design of most federal policy and the allocation of federal resources is reflected in federal aid programs such as Title I, the emphasis in this paper will be focused on the efficiency and equity considerations of federal grants-in-aid programs (as opposed to service mandates) and on equity and efficiency considerations

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[2]Hanushek, Eric A., "Conceptual and Empirical Issues in the Estimation of Educational Production Functions," Journal of Human Resources, Vol. XIV, No. 3.

as they apply to programmatic concerns, program services in particular, rather than as they apply to revenue raising considerations. Using Title I as an example of federal policy in education, this paper looks at the possibility of trade-offs between efficiency and equity in the design and application of federal policy.

Why is there concern that a trade-off exists? Basically, the possibility of such a trade-off exists because there is no reason to assume that a system which allocates resources in such a manner as to maximize output would simultaneously distribute those same resources according to some normative definition of equality/equity. In fact, several considerations suggest that an allocation system which is designed specifically to maximize output would take into account special circumstances, such as the comparative advantage of some recipients, the congruence of production objectives between the allocator and the recipient, and various differential incentives for production among aid recipients. Differences among recipients in any of these factors may well mitigate against equitable allocation, especially when equity is defined in terms of compensatory allocations to recipients who are considered disadvantaged or otherwise relatively more deserving.

Indeed, when the problem of potential trade-off between efficiency and equity is viewed from a policy perspective, it seems even more likely. If policy is viewed as a combination of grant structure and grant regulation, it appears that these two components may work against each other, at least to some extent, resulting in a trade-off of unknown magnitude. That is, regulations, by restricting distribution of resources may prevent or at least inhibit the recipient agency from using its total resources as efficiently as possible. In the case of Title I, for example, grant regulations allow the use of federal Title I funds only in those schools which have relatively high proportions of low-income students and prohibit using them in other schools. This is done

with the intent of promoting a form of compensatory equity on the premise that disadvantaged students are more likely to be in schools with large proportions of low-income students. Thus, it is possible, for example, that a school which has perhaps special facilities of staff members experienced in Title I-type services and thus could readily produce more compensatory services may not be eligible for Title I funds.

On the other hand, the Title I grants, by being categorical, lower the price of producing compensatory services relative to other types of educational services, which serves as an incentive for the district to increase the amount of compensatory services it produces. Other aspects of the Title I grant structure, such as the allocational formula which, to a limited extent, recognizes and rewards local fiscal effort also promotes increasing the amount of compensatory services produced. However, there is little in the characteristics of the grant structure which directly affect the distribution of compensatory services once they are produced.

Historically, the Title I grant regulations have become increasingly restrictive in terms of defining how Title I funds and services are to be distributed. In the early years of the program, there was substantial evidence that districts were thwarting the equity goals of the program (i.e. the provision of compensatory services to disadvantaged students) by using the funds for purposes other than the production of compensatory services or distributing funds or services to students who were not disadvantaged. Reflecting the equity goals of the program, the federal government reacted by imposing regulations defining what could be produced and who could be served with Title I funds. During the process of the most recent federal re-authorization of the program, the extent to which the more restrictive regulations are effective in enforcing the long

range goal of promoting equality of opportunity and, specifically, the extent to which they inhibit districts from both producing compensatory services (efficiency) and reaching disadvantaged students in non-Title I schools (equity) came into question. In other words, there was some question as to whether or not and to what extent the current policy combination of grant structure and grant regulations was resulting in a trade-off between efficiency and equity which ultimately inhibited the overall effectiveness of the Title I program.

In general, and for Title 1 in particular, there is little concrete evidence as to the extent to which a trade-off between efficiency and equity exists in the application of federal policy in education. In theory, its existence seems plausible. In application, many participants in federal education programs claim that specific aspects of federal policy do in fact inhibit either efficiency or equity. The question of a trade-off is further complicated by differing federal, state, and local perceptions of equity and efficiency in education. In summary, equity and efficiency are both desirable elements in federal policy and by definition, a trade-off between them is undesirable. It is in the interest of effective federal policy that such a trade-off, if it exists, be minimized.

Trade-off between equity and efficiency as it applies to the implementation of federal policy is a policy concern only if it exists and if policy can be altered to change either the form or the magnitude of the trade-off. These considerations leave the policy analyst with two primary concerns. First, can the trade-offs be identified and, second, can it be related to the factors or specific components of policy over which policy-makers have control.

Ideally, the analysis must define equity and efficiency and then measure them in some consistent manner. In defining the nature of the trade-off, these definitions must be both generally applicable and reflect the context of the

specific program or policy. Developing appropriate measures of equity and efficiency involves the standard problems of data accuracy and consistency.

The subsequent analysis is intended to provide an example of how the problem of assessing the existence, magnitude, and characteristics of a trade-off between equity and efficiency in the application of federal policy in education can be approached. Although it is based on the use of "second-hand" data whose design, measurement, and collection were performed for other purposes, it does give some idea of how definitions of equity and efficiency which fit into the context of a specific federal program can be devised and applied. These definitions are then translated into empirical measures from which policy options, defined in terms of the magnitudes of the trade-offs which are associated with various policy options can be identified. This analysis, while applied to a specific example of federal policy in education is intended primarily as an example of how the question of equity/efficiency trade-off can be approached.

To assist Congressional deliverations over the re-authorization of Title I, the National Institute of Education (NIE) collected a wide range of information about compensatory education programs, Title I in particular, and their operation. The remainder of this paper draws upon some of that evidence in order to investigate the extent to which there is support for the hypotheses that some form of trade-off between equity and efficiency exists in federally-supported education programs as they are currently implemented through the policy tools available to the federal level and the extent to which a change in the form of federal policy affects this trade-off. Using Title I as an example of federal education policy, this analysis looks at how efficiency (defined as the amount of compensatory services produced by a district with its Title I funds) and equity (the distribution of Title I services among disadvantaged and other students) change when federal policy affecting intra-district allocation of Title I services was altered.

The Title I Demonstration

As noted earlier, there have been charges from both the federal and local levels that the forms of federal policy (grant structure and grant regulations), while designed to promote both equity and efficiency in the translation of federal funds into program services, may in fact inhibit the achievement of one or both of these goals at the local level. In response to charges from members of Congress as well as some local school districts that the school and student selection procedures for targeting Title I services to disadvantaged students were inefficient, one part of NIE's research agenda was the study of a "demonstration" of how districts would allocate their Title I funds and services if they were allowed greater leeway than the current regulations permit. Accordingly, thirteen districts around the country were exempted from the regulations governing intra-district school and student selection procedures. Their Title I grants continued to be categorical and non-matching, and the districts were still required to use their Title I funds to provide compensatory services to disadvantaged students. However, the exemptions allowed them much greater freedom in the production and distribution of Title I services than the regular procedures permit. In effect, then, the "demonstration" offered the sample districts an opportunity for increased control over the use of their federal funds than they would have under regular federal regulations.[3]

Briefly summarizing, most of the districts responded by increasing the number of schools and students (particularly at the elementary level) receiving Title I services. In nearly all cases, this involved providing services to students whom the district considered to be disadvantaged in terms of low academic achievement in any school, whether or not it qualified for Title I

[3]The characteristics of the demonstration and individual district allocation plans are fully described in Vanecko, J., et al, ESEA Title Allocation Policy: Demonstration Study -- Implementation Decisions and Research Plan (Abt Associates Inc., Cambridge, MA, 1977; and

funds by having a higher than district average proportion of low-income students.

Although the demonstration was not specifically designed to measure changes in equity and efficiency before and during the demonstration allocation procedures, some of the data collected as part of the demonstration study can be used to determine how the amounts and distributions of Title I services changed when a change in federal policy was simulated by allowing these districts to change from regular to their demonstration Title I allocation procedures. As noted earlier, amounts of compensatory services can to some extent be considered a measure of programmatic efficiency for Title I and the distribution of compensatory services among various types of students can be considered an indication of equity. Comparing the amount of change in each of these factors when the demonstration districts went from the more restrictive regular allocation procedures to the less restrictive demonstration procedures provides an indication of how equity changes in relation to efficiency when federal policy governing the intra-district allocation of Title I resources is altered.

As noted earlier and shown on Table 1, most of the districts increased the total number of students who received compensatory educational services funded by Title I. However, because the number of students receiving services is an incomplete estimate of the amount of services, a measure of amount based on the standardized unit of a full-time equivalent student (FTE) was used to measure amounts of instructional services.[4]

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[4]This measure is based on the mean proportion of a typical Title I student's day spent in receiving compensatory instruction, multiplied by the number of days in the school year and the number of students who received Title I services. This was calculated for each instructional component (such as remedial reading) offered in the districts compensatory program and the amount of services was then summed over all components. For a more detailed description of the methodology and the amounts and types of services, see Sjogren, J. and Hentschke, G., "Studying the Costs of Title I Under Achievement and Poverty Allocation Criteria", presented at the Annual Meeting of the American Educational Research Association, April 1977; Chapter 9 of Vanecko, J. et al., 1977 (op cit); and Vanecko, et. al., ESEA Title I Allocation Policy: Demonstration Study--Results of First Year Implementation, Vols, I and II, Abt Associates Inc., Cambridge, MA, 1978.

Table 1

District	Number of Students Receiving Title I Services[1,2]			Amount of Title Services (Student FTEs)[1,2]			Title I Expenditures Per Student FTE[1]		
	Regular Allocation Procedures 1975-1976	Demonstration Allocation Procedures 1976-77	% Change	Regular Allocation Procedures 1975-76	Demonstration Allocation Procedures 1976-77	% Change	Regular Allocation Procedures 1975-76	Demonstration Allocation Procedures 1976-77	% Change
1	775	784	1%	34	48	41%	$4,411	$3,286	-25%
2	712	1,396	96	36	68	89	5,345	3,976	-26
3[3]	15,210	10,723	-30	2,861	2,742	-4	3,096	3,530	14
4	6,713	7,266	8	729	851	17	3,330	2,682	-19
5	1,429	1,876	31	77	120	56	4,977	4,539	-8
6	22,250	23,145	4	2,460	2,307	-6	2,906	3,480	20
7	4,929	5,988	21	249	257	3	1,634	1,469	-10
8	535	630	18	39	48	23	6,823	8,343	22
9	1,466	1,244	-15	167	91	-46	6,320	11,805	87
10	1,097	1,561	42	106	126	19	5,989	4,463	-25
11	4,375	5,298	35	1,007	822	18	1,534	2,251	47
12[3]	3,925	na	na	362	na	na	5,167	na	na
			$\bar{x}$=32%			$\bar{x}$=19%			$\bar{x}$=7%

1. Source: Sjogren, J. "An Analysis of Title I Costs at the District Level, Journal of Education Finance, Vol. 5, No. 2, Fall 1979 and (Vol. II)

2. Includes Title I students in public elementary and secondary schools unless otherwise noted.

3. Includes non-public school students.

Comparing the amounts of services (student FTEs) during the year of operation under regular allocation procedures to the total amount of Title I services produced during the year of "demonstration" allocation procedures indicates that as a group, the districts were able to increase the amount of compensatory services, suggesting that their efficiency did increase. However, although the demonstration districts did not receive any extra funds (other than a small administrative allotment) for participating in the demonstration, some of them were able to increase their Title I expenditures to limited extents by using carry-over funds or receiving small increases in their formula-based Title I allotments allowing them to increase the amount of services. To take these increases into account, Table 1 also shows changes in Title I expenditures per student FTE. As a group, the demonstration districts did increase the amount of Title I expenditures per unit of services slightly (x=7%), but this increase is not as large as the mean increase in the total amount of services (19%). Thus, the increase in services produced was not matched by a proportionate increase in the costs of a unit of service, indicating that some efficiency occurred as part of the increase in Title I services. More notable perhaps, is the fact that about half of the districts were able to decrease their Title I expenditures for a unit of service (a student FTE), in conjunction with increasing the total amount of services they produced, indicating that they did produce a larger amount of services at a smaller cost per unit of service.[5]

Briefly summarizing, as a group the districts were somewhat more efficient in that they produced larger amounts of compensatory services when constraints on the distribution of Title I funds were loosened. More specifically, this observation is directly applicable to half of this small sample.

[5] A detailed investigation of how these districts were able to do this is contained in "An Analysis of Resources Used to Increase Title I Elementary Instruction under the Title I Funds Allocation Demonstration" by Jane Sjogren and Richard Ames (a working paper submitted to NIE, February, 1979).

At the same time as the demonstration districts increased the number of schools and students receiving Title I services, as well as the total amount of services produced, they distributed these services somewhat differently. As noted earlier, the primary equity objective of federal policy in the Title I program is the distribution of the compensatory services funded by Title I grants to disadvantaged students. However, the definition of a "disadvantaged" student, especially as is applied in the regulations defining funds allocation, procedures is somewhat ambiguous. By using the proportion of low-income students as the criteria for whether or not a school is eligible for Title I, this part of the regulations suggests that "disadvantage" refers to low-income. However, student targeting procedures within Title I schools specify that Title I services are to be directed only to low-achieving students. Thus, disadvantage seems to refer to either low-income, low-achievement or to some combination of the two. Accordingly, changes in the distribution of Title I services resulting from the demonstration, and their equity implications need to take both of these student characteristics into account. Table 2 indicates the proportions of the relevant types of students who received Title I services before and during the demonstration.[6] For the districts as a group, there was a small increase in the proportion of low-achieving (low-achieving is defined as reading one or more years below grade level according to district definition) students receiving Title I services and a small decrease in low-income (low-income is defined as eligibility for participation in the free lunch program, a decision made at the district level) students.

Because of the ambiguity of defining "disadvantaged" as either low-income or low-achievement in terms of both policy significance and application, it is useful to look at the proportion of students who were both low-income and low-

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[6] These proportions are based on a sample of third and fourth grade students in the demonstration districts. For a description of sampling procedures, the data, and other technical aspects of the demonstration research, see Vanecko, James, J., et al., ESEA Allocation Policy: Demonstration Study--Implementation Decisions and Research Plan (Abt Associates Inc.: Cambridge, MA, December 9, 1977.).

Table 2

District	Proportion of Low-Achieving[1,2] Students Receiving Title I: Regular Allocation Procedures 1975-1976	Demonstration Allocation Procedures 1976-77	% Change	Proportion of Poor Students[1,3] Receiving Title I: Regular Allocation Procedures 1975-76	Demonstration Allocation Procedures 1976-77	% Change	Proportion of Doubly-Disadvantaged[3] Students Receiving Title I[4]: Regular Allocation Procedures 1975-76	Demonstration Allocation Procedures 1976-77	% Change
1	83%	74%	-9%	24%	21%	3%	20%	30%	10%
2	79	67	-12	57	57	0	34	62	28
3	65	64	-1	91	92	1	71	71	0
4	83	79	-4	73	61	-12	73	64	-9
5	67	68	1	65	58	-7	73	75	2
6	67	67	0	83	85	2	56	51	-5
7	44	62	18	45	32	-13	67	47	-20
8	53	66	13	77	62	-15	59	44	-15
9	60	58	-2	44	42	-2	36	49	13
10	64	72	8	86	75	-11	68	68	0
11	72	88	16	64	71	7	79	59	-20
12	61	72	11	85	72	-13	90	75	-15
			$\bar{x}$=3%			$\bar{x}$=-4%			$\bar{x}$=-3%

1. Source: Vanecko, James et. al., ESEA Title Allocation Policy Demonstration Study: Results of the First Year Implementation, Abt Associates Inc., Cambridge, MA, January 30, 1978.

2. Low-achieving is defined as reading one or more years below grade level according to district definition.

3. Doubly-disadvantaged students refers to those who are both low-achieving and poor.

4. Source: Hennessy, M., et. al., "The Effects of Current and Alternative Intra-District Allocation Procedures on Coverage of Disadvantaged Students" (working paper), Abt Associates Inc., Cambridge, MA March 14, 1978.

achieving (i.e. are "doubly-disadvantaged") who received Title I compensatory services before and during the demonstration. As indicated on Table 2, there was little change in the demonstration districts as a group in the proportions of doubly-disadvantaged students served, suggesting that the equity of distribution of Title I compensatory services was largely unaffected by the change in allocation procedures resulting from the simulated policy change. However, a closer look at the table reveals decreases in the proportions of doubly-disadvantaged served in half of the districts and that some of these decreases were sizable (from 15-20%).

In comparing the changes which occurred in efficiency and equity, as measured by the amount and distribution of compensatory services during the simulated policy change observed during the Title I demonstration, it appears that for the districts as a group, there was a greater change in efficiency than in equity. That is, while there was an increase in the amount of services produced, there was not a proportionate decrease in the distribution of those services to disadvantaged students. Thus, there was not a clear or proportionate trade-off between equity and efficiency when federal policy was altered by changing the Title I regulations to allow greater district control over the allocation of Title I funds. Rather, it appears that the changes which occurred for the Demonstration perhaps resulted in some economies of scale or otherwise positively affected service production in a manner which did not simultaneously provoke a loss in equity.

However, from a federal policy point of view, the changes which were observed during the demonstration provide information about policy choices rather than a mandate for changing federal Title I policy. In particular, the increases in the amounts of compensatory servides (or the decreases in the costs to the federal government per unit of service) may not be sufficient to compensate

for the loss of equity which occurred in half of the demonstration districts. The extent to which one or the other of these factors outweighs the other is clearly a choice for policy-makers.

Summary and Points to Consider

The preceding discussion has focused on a specific case of whether or not and to what extent a specific change in federal policy resulted in a form of trade-off between equity and efficiency. Although the example used here was an experimental situation, one which was not designed to respond directly to the equity vs. efficiency question, and hence involved using and interpreting "borrowed" data, both the approach and the outcome are illustrative of how questioning the possibility that the trade-off exists and how the response to the question is immensely relevant to the federal policy-making process.

To a large extent, the boundaries within which the federal role in education operates are set both by the nature of the federal system and by the traditional operation of public education. Yet the federal role is both important and growing. That a potential trade-off between equity and efficiency exists, especially with respect to the federal role because of its emphasis on equality of opportunity, seems plausible on both intuitive and conceptual levels. Yet very little evidence either about its existence or of the magnitude of the trade-off is available.

Using data from a simulated change in federal policy, this paper has provided an example of how one might go about investigating the question of the equity and efficeincy mean within the context of the specific program being observed. Using ESEA Title I and the federal objectives for that program as an example of federal policy, the amount of compensatory services produced seemed an appropriate measure of efficiency, while the distribution of those services to disadvantaged

seemed appropriate for the definition of equity. In addition, it is important to be clear about the nature of the specific federal policy or program. In this case, federal policy is viewed as a combination of grant structure and grant regulation. For the simulated policy change of the demonstration, part of the regulations (those governing intra-district allocation of Title I funds) were changed.

Although the analysis of the data available from the demonstration was not extensive in this example, the conclusions are illustrative of several points. First, there were some changes in both equity and efficiency as defined. These changes could be interpreted either for the demonstration districts as a group or according to the range of changes observed within the group. Second, there was not a clear trade-off observed. Instead, it appeared that the type of change in the regulations which had occurred had affected the production of compensatory services more than the distribution of those services. Finally, the differences in the equity and efficiency outcomes emphasize the point that this type of analysis should be considered as a source of information to policy-makers about the implications of various types of policy choices and combinations of policy components rather than as a clear mandate for specific changes in current policy.

In summary, the development of federal policy is a complex and incremental affair. Because of the limitations inherent in the federal role in education, it is especially important that federal policy be formed and implemented with as much information as possible. Questions such as the existence of the equity/efficiency trade-off is one way of generalizing the information necessary for determining the policy choices open to the federal level.